

IN THE CLAIMS:

Please amend the Claims so as to read as follows:

1. (Currently Amended) A magnetic storage medium, comprising:
a magnetic recording layer;
a superconducting layer; and
a non-magnetic thermal insulation layer, provided between the
superconducting layer and the magnetic recording layer, for
reducing heat transmitted from the superconducting layer to the
magnetic recording layer.
2. Canceled, without prejudice.
3. (As originally filed) The magnetic storage medium as set forth in claim 1,
wherein
the magnetic recording layer is composed of a Co alloy.
4. (As originally filed) The magnetic storage medium as set forth in claim 1,
wherein
the magnetic recording layer is composed of a perpendicularly
magnetized artificial lattice.

5. (As originally filed) The magnetic storage medium as set forth in claim 1,
wherein
the magnetic recording layer is composed of a perpendicularly
magnetized amorphous alloy of rare earth and transition
metals.
6. (As originally filed) The magnetic storage medium as set forth in claim 1,
wherein
the superconducting layer is composed of a high temperature
superconductor oxide.
7. Canceled, without prejudice.
8. Canceled, without prejudice.
9. Canceled, without prejudice.

10. (Previously Presented) A method of recording and reproducing using a magnetic storage medium in which at least a magnetic recording layer, a superconducting layer and a thermal insulation layer provided between the superconducting layer and the magnetic recording layer are deposited, wherein:
 - data is recorded in the magnetic recording layer by passing a signal magnetic field produced by a recording-use magnetic head through a part of the superconducting layer where the data is to be recorded and diamagnetism disappears; and
 - data is reproduced from the magnetic recording layer by detecting, using a reproduction-use magnetic head, a magnetic flux leakage from the magnetic recording layer through a part of the superconducting layer where the data is to be reproduced and diamagnetism disappears.
11. (As Originally Filed) The method of recording and reproducing a magnetic storage medium as set forth in claim 10, wherein:
 - diamagnetism in the superconducting layer disappears through heating by the heating means; and
 - the heating means is semiconductor laser beam projection means.

12. (As Originally Filed) The method of recording and reproducing a magnetic storage medium as set forth in claim 10, wherein
either one of the recording-use magnetic head and the
reproduction-use magnetic head is a thin film
magnetic head.
13. (As Originally Filed) The method of recording and reproducing a magnetic storage medium as set forth in claim 10, wherein
the reproduction-use magnetic head is a magnetic
resistance element.